IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A lithographic projection apparatus comprising:

a projection system configured to project a patterned beam of radiation onto a target portion of a substrate;

an alignment system;

a control system configured to generate a predicted change in a time-varying property of a part of said apparatus;

a comparator configured to compare a value, based on the predicted change, to a threshold and to generate a trigger signal when the value is greater than the threshold; and

a threshold adjustor that is configured to adjust the threshold ~~threshold,~~ according to a relation between a measurement of the time-varying property and the predicted change in the time-varying property, wherein said alignment system is configured to perform an alignment task in response to the trigger signal.

2. (Original) The lithographic projection apparatus according to claim 1, wherein the alignment task includes obtaining a measurement of the time-varying property.

3. (Cancelled)

4. (Currently Amended) The lithographic projection apparatus according to claim 1~~claim 3~~, wherein the threshold is reduced in response to a determination that a distance between the measurement of the time-varying property and the value based on the predicted change is greater than a second threshold.

5. (Currently Amended) The lithographic projection apparatus according to claim 1 ~~claim 3~~, wherein the threshold is increased in response to a determination that a distance between the measurement of the time-varying property and a value, based on the predicted change, is less than a second threshold.

6. (Currently Amended) The lithographic projection apparatus according to claim 1 ~~claim 3~~, wherein the control system is configured to increase the threshold by an increment, and wherein the increment is adjustable.

7. (Previously Presented) The lithographic projection apparatus according to claim 6, wherein the increment is reduced in response to a determination that a distance between the measurement of the time-varying property and the value, based on the predicted change, is greater than a second threshold.

8. (Previously Presented) The lithographic projection apparatus according to claim 6, wherein the increment is increased in response to a determination that a distance between the measurement of the time-varying property and the value, based on the predicted change, is less than a second threshold.

9. (Previously Presented) The lithographic projection apparatus according to claim 1, wherein, in response to the predicted change in the time-varying property, the apparatus is configured to compensate for a change in the time-varying property.

10. (Previously Presented) The lithographic projection apparatus according to claim 1, wherein, in response to the predicted change in the time-varying property, the apparatus is configured to adjust a position of (1) a mask having the pattern of the patterned beam, (2) the substrate, (3) an element of said projection system, or (4) any combination of (1) to (3).

11. (Previously Presented) The lithographic projection apparatus according to claim 1, wherein, in response to the predicted change in the time-varying property, the apparatus is configured to compensate for a change in the time-varying property relative to a most recent measurement of the time-varying property.

12. (Previously Presented) The lithographic projection apparatus according to claim 1, wherein, in response to the predicted change in the time-varying property, the apparatus is configured to compensate for a change in the time-varying property relative to a most recent performance of the alignment task.

13. (Original) The lithographic projection apparatus according to claim 1, wherein the time-varying property includes a temperature-dependent property of said projection system.

14. (Original) The lithographic projection apparatus according to claim 13, wherein the temperature-dependent property includes an optical property.

15. (Original) The lithographic projection apparatus according to claim 14, wherein the optical property includes a magnification.

16. (Original) The lithographic projection apparatus according to claim 1, wherein said alignment system is adapted to perform a first alignment task and a second alignment task that provides a larger number of measurements than the first alignment task, and

wherein said alignment system is adapted to perform the second alignment task in response to the trigger signal.

17. (Currently Amended) A lithographic projection apparatus comprising:

a projection system configured to project a patterned beam of radiation onto a target portion of a substrate;

an alignment system;

a control system configured to generate a predicted change in a time-varying property of a part of said apparatus;

a comparator configured to compare a value, based on the predicted change, to a threshold and to generate a trigger signal when the value is greater than the threshold; and

an adjustor that is configured to determine a modified predicted change in the time-varying property, based on a measurement of the time-varying property, and is configured to

adjust a threshold according to a relation between a measurement of the time-varying property and the predicted change in the time-varying property, wherein the alignment system is configured to perform an alignment task in response to the trigger signal.

18. (Previously presented) The lithographic projection apparatus according to claim 17, wherein the control system is configured to store a modified value, based on the modified predicted change, and

wherein the apparatus is configured to perform an operation on a second substrate according to the modified value.

19. (Previously presented) The lithographic projection apparatus according to claim 17, wherein the adjustor is configured to determine a plurality of modified predicted changes in the time-varying property and to store a plurality of modified values based on a corresponding one of the modified predicted changes, and

wherein the apparatus is configured to perform an operation on a second substrate according to a selected one among the plurality of modified values.

20. (Previously presented) The lithographic projection apparatus according to claim 17, wherein, in response to the predicted change in the time-varying property, the apparatus is configured to compensate for a change in the time-varying property.

21. (Previously presented) The lithographic projection apparatus according to claim 17, wherein, in response to the predicted change in the time-varying property, the apparatus is

configured to compensate for a change in the time-varying property relative to a most recent measurement of the time-varying property.

22. (Previously presented) The lithographic projection apparatus according to claim 17, wherein said time-varying property includes a temperature-dependent property of said projection system.

23. (Original) The lithographic projection apparatus according to claim 22, wherein the temperature-dependent property includes an optical property.

24. (Original) The lithographic projection apparatus according to claim 23, wherein the optical property includes a magnification.

25. (Original) The lithographic projection apparatus according to claim 17, wherein said alignment system is adapted to perform a first alignment task and a second alignment task that provides a larger number of measurements than said first alignment task, and

wherein said alignment system is adapted to perform said second alignment task in response to said trigger signal.

26. (Currently Amended) A device manufacturing method using a lithographic projection apparatus, the method comprising:

providing a substrate that is at least partially covered by a layer of radiation-sensitive material;

using a projection system to project a patterned beam of radiation onto a target portion of the layer of radiation-sensitive material;

generating a predicted change of a time-varying property of a part of said apparatus at a time of a particular exposure;

obtaining a threshold value;

detecting when a value based on the predicted change exceeds the threshold value;

enabling adjustment of the threshold value;

adjusting the threshold value according to a relation between a measurement of the time-varying property and the value based on the predicted change; and

performing an alignment task in response to said detecting.

27. (Original) The device manufacturing method according to claim 26, wherein the alignment task includes obtaining a measurement of the time-varying property.

28. (Cancelled)

29. (Currently Amended) The device manufacturing method according to claim 26 ~~claim 28~~, further comprising reducing the threshold value in response to a determination that a distance between a measurement of the time-varying property and the value based on the predicted change is greater than a second threshold.

30. (Previously Presented) The device manufacturing method according to claim 28, further comprising increasing the threshold value in response to a determination that a distance

between a measurement of the time-varying property and the value based on the predicted change is less than a second threshold.

31. (Previously Presented) The device manufacturing method according to claim 28, further comprising increasing the threshold value by an increment, and wherein the increment is adjustable.

32. (Previously Presented) The device manufacturing method according to claim 31, further comprising reducing the increment in response to a determination that a distance between a measurement of the time-varying property and the value based on the predicted change is greater than a second threshold.

33. (Previously Presented) The device manufacturing method according to claim 31, further comprising increasing the increment in response to a determination that a distance between a measurement of the time-varying property and the value based on the predicted change is less than a second threshold.

34. (Previously Presented) The device manufacturing method according to claim 26, further comprising, performing the alignment task to compensate for the change in the time-varying property relative to a most recent measurement of the time-varying property.

35. (Original) The device manufacturing method according to claim 26, wherein said time-varying property includes a temperature-dependent property of the projection system.

36. (Original) The device manufacturing method according to claim 35, wherein the temperature-dependent property is a magnification.

37. (Currently Amended) A device manufacturing method using a lithographic projection apparatus, the method comprising:

providing a substrate that is at least partially covered by a layer of radiation-sensitive material;

using a projection system to project a patterned beam of radiation onto a target portion of the layer of radiation-sensitive material;

generating a predicted change of a time-varying property of a part of said apparatus at a time of a particular exposure;

adjusting an aspect of the apparatus based on the predicted change of the time-varying property;

obtaining a threshold value;

detecting when a value based on the predicted change exceeds the threshold value;

performing an alignment task in response to said detecting;

enabling adjustment of the threshold value;

adjusting the threshold value according to a relation between a measurement of the time-varying property and the value based on the predicted change; and

determining a modified predicted change in the time-varying property based on a measurement of the time-varying property.

38. (Previously Presented) The device manufacturing method according to claim 37, further comprising compensating for a change in the time-varying property relative to a most recent measurement of the time-varying property.

39. (Original) The device manufacturing method according to claim 37, wherein said time-varying property includes a temperature-dependent property of the projection system.

40. (Original) The device manufacturing method according to claim 39, wherein the temperature-dependent property is a magnification.